# **What Systems Engineers Do**



- Data analysis: design and building of data analytical systems to extract insights of complex data using
  - and procedures to identify areas for improvement. They propose and implement solutions to enhance efficiency, security, and productivity within an organization's IT infrastructure.
  - IT Management: manage and maintain an organization's IT infrastructure like datacenters, networks, and databases.

# **Curriculum of Systems Engineer**

- Calculus I
- Fundamentals of Programming
- Basic Chemistry
- Linear Algebra I
- Sports and Physical Training
- Language Workshop
- University Life and Culture

- Calculus II
- Citizenship Ethics
- Physics I
- Object Oriented Programming
- Biology for Engineers
- Enalish I

- Calculus III Physics II
  - Discrete Mathematics
  - Data Structure and Analysis of Algorithms
  - English II

- Differential equations
- Physics III
- Fundamentals of Electronics
- Automata and Formal Languages
- Databases I

- Databases II
- Digital Systems
- Numerical Analysis I
- Systems and Organizational Thinking
- Business Management I

- Statistics I
- Computer Networks I
- Computer Architecture
- Web Programming
- Information Systems

- Statistics II
- Software Engineering I
- Computer Networks II

Graduation Project I

• Free Choice Courses

Elective Courses

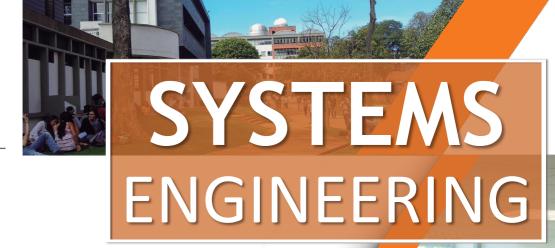
• Engineering Economics

 Artificial Intelligence I Elective Courses

- Operating Systems
- Software Engineering II Digital Simulation
- Elective Courses

- Graduation Project II
- Business Economy
- Flective Courses

More information about the program can be found on **www.uis.edu.co** Ciudad universitaria – 27th Ave. and 9th Street, Bucaramanga, Colombia Contact (+57) (7) 6344000, extensions. 2925, 2825 and 2225 -inscripciones@uis.edu.co





www.uis.edu.co

**SNIES:** 698

**Current Qualified Registry Resolution:** 

Res. 18039 of 28/09/2020 of the MEN

**High Quality Accreditation:** Res. 18039

of 28/09/2020 of the MEN

**Title awarded:** Systems Engineer

**Duration of the program:** 10 academic

semesters

**Program location:** Bucaramanga

## **Institucional Information**

research groups recognized by Colciencias UIS **patents**, **12** of them international of our **tenured professors** hold a Ph.D. degree. **UIS researchers** recognized by **Colciencias** in different categories artistic groups made up of students **Guatiguará** is the most complete technology park in Colombia **Sports groups** made up of students Economic and financial incentives

University **dinning facilities** 



### **Student Profile**

To be successful in this program, the applicant must have the following skills:

- Abstract reasoning.
- Perform mathematical calculation operations.
- Determine optimal efficiency conditions, troubleshoot.
- Access basic computer skills, software and hardware.
- Administrative and financial sciences.

# **Professional profile**

The professional profile of a Systems Engineer at UIS corresponds to a professional capable of:

- Examining, formulating, analyzing, treating, and solving problems interacting with professional in other areas, identifying the main characteristic of those problems, understanding the requirements and constrains and proposing a solution based in a system model that relates coherently all components involved. Thus, ensuring an efficient solution using available technology infrastructure.
- Performing with the best professional quality and high ethical values his/her performance in his/her.



Professional life as a social, technical-scientific agent and administrative, under the following postulates:

### Social Aget

A professional capable of disseminating and applying all levels of basic knowledge and specializations that facilitate good management and correct treatment of the information, the communications and automation as main inputs for the development of organizations. Thus, showing the benefits that they get when their app is done in adequate form.

### **Technical - Scientific**

A professional capable of recognizing, analyzing, evaluating, developing and implementing through use of information technology, the communications and automation, systems for specific use or general in all areas of knowledge.

#### **Administrative**

A professional who participates in the evaluation, acquisition and management of all computing resources, communications and automation that support the organizations. A professional capable of conceiving and developing technology-based companies; studies, plans, evaluates and carries out projects with preference in the fields of computer science, communications and automation productive processes.